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Claims

1-35. (Canceled)

36. (Previously presented) A method for treating a neurological disorder or dysfunction comprising:

- a) contacting a population of human or porcine neural cells with a hibernation medium free of Ca^{++} and free of protein and free of buffer to thereby produce a cell suspension;
- b) maintaining the cell suspension at about 4°C for between at least about 12-72 hours to thereby store a population of neural cells suitable for transplantation, wherein the population of neural cells is between at least about 75-100% viable;
- c) transplanting the population of neural cells to a subject with a neurodegenerative disorder or dysfunction, such that the neurological disorder or dysfunction is treated.

37. (Previously presented) A method for treating a neurological disorder or dysfunction comprising:

- a) contacting a population of human or porcine neural cells with a hibernation medium free of buffer to thereby produce a cell suspension;
- b) maintaining the cell suspension at about 4°C for between at least about 12-72 hours to thereby store a population of neural cells suitable for transplantation, wherein the population of neural cells is between at least about 75-100% viable; and
- c) transplanting the population of neural cells to a subject with a neurodegenerative disorder or dysfunction, such that the neurological disorder or dysfunction is treated.

38. (Previously presented) A method for treating a neurological disorder or dysfunction comprising:

- a) contacting a population of human or porcine neural cells with a hibernation medium which medium is free of protein and free of a buffer to thereby produce a cell suspension;

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b) maintaining the cell suspension at about 4°C for between at least about 12-72 hours to thereby store a population of neural cells suitable for transplantation, wherein the population of neural cells is between at least about 75-100% viable; and

c) transplanting the population of neural cells to a subject with a neurodegenerative disorder or dysfunction, such that the neurological disorder or dysfunction is treated.

39. (Previously presented) A method for treating a neurological disorder or dysfunction comprising:

a) contacting a population of human or porcine neural cells with a hibernation medium which medium consists of glucose and sodium chloride to thereby produce a cell suspension;

b) maintaining the cell suspension at about 4°C for between at least about 12-72 hours to thereby store a population of neural cells suitable for transplantation, wherein the population of neural cells is between at least about 75-100% viable; and

c) transplanting the population of neural cells to a subject with a neurodegenerative disorder or dysfunction, such that the neurological disorder or dysfunction is treated.

40. (Previously presented) A method for treating a neurological disorder or dysfunction comprising:

a) contacting a population of human or porcine neural cells with a cryopreservation solution which is free of a buffer and which comprises a cryopreservative to thereby obtain a population of cells for cryopreservation;

b) decreasing the temperature of the population of neural cells to about -196°C to thereby cryopreserve a population of neural cells suitable for transplantation, wherein population of neural cells is between at least about 75-100% viable; and

c) transplanting the population of neural cells to a subject with a neurodegenerative disorder or dysfunction, such that the neurological disorder or dysfunction is treated.

41. (Previously presented) A method for treating a neurological disorder or dysfunction comprising:

a) contacting a population of human or porcine neural cells with a cryopreservation solution which is free of protein and a buffer and which comprises a cryopreservative to thereby obtain a population of cells for cryopreservation;

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b) decreasing the temperature of the population of neural cells for cryopreservation to about -196°C to thereby cryopreserve a population of neural cells suitable for transplantation, population of neural cells is between at least about 75-100% viable; and

c) transplanting the population of neural cells to a subject with a neurodegenerative disorder or dysfunction, such that the neurological disorder or dysfunction is treated.

42. (Previously presented) A method for treating a neurological disorder or dysfunction comprising::

a) contacting a population of human or porcine neural cells with a cryopreservation solution consisting of glucose, sodium chloride, and a cryopreservative to thereby obtain a population of cells for cryopreservation;

b) decreasing the temperature of the population of neural cells for cryopreservation to about -196°C to thereby cryopreserve a population of neural cells suitable for transplantation, population of neural cells is between at least about 75-100% viable; and

c) transplanting the population of neural cells to a subject with a neurodegenerative disorder or dysfunction, such that the neurological disorder or dysfunction is treated.

43. (Previously presented) The method for any one of claims 40, 41, 42, wherein the neural cells are fetal human cells.

44. (Previously presented) The method for claim 43, wherein the neural cells are differentiated from human neural stem or neural progenitor cells that have been induced to differentiate *in vitro*.

45. (Previously presented) The method for any one of claims 40, 41, 42, wherein the neural cells are porcine cells.

46. (Previously presented) The method for claim 45, wherein the porcine neural cells are ventral mesencephalic cells.

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47. **(Previously presented)** The method for claim 45, wherein the porcine neural cells are selected from the group consisting of spinal cord cells, striatal cells, and cortical cells.

48. **(Previously presented)** The method for any one of claims 40, 41, 42, wherein the neurological disorder or dysfunction is selected from the group consisting of Parkinson's disease, Huntington's disease, Lou Gehrig's disease or amyotrophic lateral sclerosis, multiple sclerosis, Alzheimer's disease, and damage to the nervous system.

49. **(Previously presented)** A method for treating a neurological disorder or dysfunction comprising:

- a) contacting a population of human or porcine neural cells with a cryopreservation solution free of a buffer and comprising a cryopreservative to thereby obtain a population of cells for cryopreservation;
- b) decreasing the temperature of the population of neural cells for cryopreservation to about -196°C to obtain cryopreserved neural cells;
- c) increasing the temperature of the cryopreserved neural cells to thereby obtain a population of neural cells suitable for transplantation, wherein the population of neural cells is between at least about 75-100% viable; and
- d) transplanting the population of neural cells to a subject with a neurodegenerative disorder or dysfunction, such that the neurological disorder or dysfunction is treated.

50. **(Previously presented)** A method for treating a neurological disorder or dysfunction comprising:

- a) contacting a population of human or porcine neural cells with a cryopreservation solution free of protein and a buffer and which comprises a cryopreservative to thereby produce a population of neural cells suitable for cryopreservation;
- b) decreasing the temperature of the population of neural cells for cryopreservation to about -196°C to obtain cryopreserved neural cells;
- c) increasing the temperature of the cryopreserved neural cells to thereby obtain a population of neural cells suitable for transplantation, wherein the population of neural cells is between at least about 75-100% viable; and

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d) transplanting the population of neural cells to a subject with a neurodegenerative disorder or dysfunction, such that the neurological disorder or dysfunction is treated.

51. (Previously presented) A method for treating a neurological disorder or dysfunction comprising:

a) contacting a population of human or porcine neural cells with a cryopreservation solution consisting of: glucose, sodium chloride, and a cryopreservative to thereby obtain a population of cells for cryopreservation;

b) decreasing the temperature of the population of neural cells for cryopreservation to about -196°C to obtain cryopreserved neural cells;

c) increasing the temperature of the cryopreserved neural cells to thereby obtain a population of neural cells suitable for transplantation, wherein the population of neural cells is between at least about 75-100% viable; and

d) transplanting the population of neural cells to a subject with a neurodegenerative disorder or dysfunction, such that the neurological disorder or dysfunction is treated.

52. (Previously presented) The method for any one of claims 49, 50, or 51, wherein the neural cells are fetal human cells.

53. (Previously presented) The method for claim 52, wherein the neural cells are differentiated from human neural stem or neural progenitor cells that have been induced to differentiate *in vitro*.

54. (Previously presented) The method for any one of claims 49, 50, or 51, wherein the neural cells are porcine cells.

55. (Previously presented) The method for claim 54, wherein the porcine neural cells are ventral mesencephalic cells.

56. (Previously presented) The method for claim 54, wherein the porcine neural cells selected from the group consisting of spinal cord cells, striatal cells, and cortical cells.

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57. (Previously presented) The method for any one of claims 49, 50, or 51, wherein the neurological disorder or dysfunction is selected from the group consisting of Parkinson's disease, Huntington's disease, Lou Gehrig's disease or amyotrophic lateral sclerosis, multiple sclerosis, Alzheimer's disease, and damage to the nervous system.

58. (Previously presented) A method for treating a neurological disorder or dysfunction comprising:

- a) contacting a population of human or porcine neural cells with a hibernation medium to thereby produce a cell suspension;
- b) maintaining the cell suspension for at least about 24 hours at about 4°C in hibernation medium;
- c) contacting the cell suspension with a cryopreservation solution to thereby store a population of neural cells suitable for transplantation, wherein the population of neural cells is between at least about 75-100% viable; and
- d) transplanting the population of neural cells to a subject with a neurodegenerative disorder or dysfunction, such that the neurological disorder or dysfunction is treated.

59. (Previously presented) A method for treating a neurological disorder or dysfunction comprising:

- a) contacting a population of human or porcine neural cells with a hibernation medium to thereby produce a cell suspension;
- b) maintaining the cell suspension for at least about 24 hours at about 4°C in hibernation medium;
- c) contacting the cell suspension with a cryopreservation solution to thereby obtain a population of cells for cryopreservation;
- d) decreasing the temperature of the population of neural cells suitable for cryopreservation to about -196°C to thereby cryopreserve a population of neural cells suitable for transplantation, wherein the population of neural cells is between at least about 75-100% viable; and
- e) transplanting the population of neural cells to a subject with a neurodegenerative disorder or dysfunction, such that the neurological disorder or dysfunction is treated.

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60. (Previously presented) A method for treating a neurological disorder or dysfunction comprising:

- a) contacting a population of human or porcine neural cells with a hibernation medium to thereby produce a cell suspension;
- b) maintaining the cell suspension for at least about 24 hours at about 4°C in hibernation medium;
- c) contacting the cell suspension with a cryopreservation solution to thereby obtain a population of cells for cryopreservation;
- d) decreasing the temperature of the population of neural cells for cryopreservation to about -196°C;
- e) increasing the temperature of the neural cells to thereby obtain population of neural cells suitable for transplantation, wherein the population of neural cells is between at least about 75-100% viable; and
- f) transplanting the population of neural cells to a subject with a neurodegenerative disorder or dysfunction, such that the neurological disorder or dysfunction is treated.